

# SEQUENCE LISTING

<110> KLEIN, ROBERT  
MATTHEWS, WILLIAM  
MOORE, MARK  
ALLEN, KEITH

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<150> US 60/161,488

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<213> Artificial Sequence



<220>

<223> Description of Artificial Sequence:primer

<400> 22

ctgggttcttg tctggcttgg cccaatgcaa cagggttcct gagcggtcat 50

<210> 23

<211> 49

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 23

ggtcctcgct ctgtgtccgt tgaacctcaa gctggcctac tatgcctat 49

<210> 24

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 24

tttgctgctc ctgtgtcgtc gaacgactaa atacgactca ctatagggcg 50

<210> 25

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 25

gccaatggac tcttagtttt ggaac 25

<210> 26

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 26

gttctggcaa acaaattcgg cgcac 25

<210> 27

<211> 51

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 27  
tgtgtcctc tttggcttgc ttccaattaa ccctcactaa agggaacgaa t 51

<210> 28  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:primer

<400> 28  
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<210> 29  
<211> 49  
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<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:primer

<400> 29  
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<210> 30  
<211> 25  
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<220>  
<223> Description of Artificial Sequence:primer

<400> 30  
gaaccttggt gtgccaagtt acttc 25

<210> 31  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:primer

<400> 31  
gaactttggc tgaaccctt gttct 25

<210> 32  
<211> 53  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:primer



[illegible]

<223> Description of Artificial Sequence: primer

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<210> 39
<211> 49
<212> DNA
<213> Artificial Sequence
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<223> Description of Artificial Sequence:primer

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<210> 40
<211> 49
<212> DNA
<213> Artificial Sequence
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<223> Description of Artificial Sequence: primer

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<210> 41
<211> 50
<212> DNA
<213> Artificial Sequence
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<223> Description of Artificial Sequence: primer

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<210> 42
<211> 49
<212> DNA
<213> Artificial Sequence
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<223> Description of Artificial Sequence: primer

<210> 43

<211> 51  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: primer

<400> 43  
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<210> 44  
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 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: primer

<400> 44  
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<210> 45  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: primer

<400> 45  
 agctcagaca tggactccat ggccc 25

<210> 46  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: primer

<400> 46  
 tgcgattgcc cagcaaatgc gaagt 25

<210> 47  
 <211> 1839  
 <212> DNA  
 <213> murine TRP

<400> 47  
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 tccatgtctg agctcgcgcc ccgctgcctc ttatttcctt tgctgctgct gcttccgctg 120  
 ctgctccttc ctgccccgaa gctaggcccg agtcccgccg gggctgagga gaccgactgg 180  
 gtgcgattgc ccagcaaagt cgaagtgtgc aagtatgttg ctgtggagct gaagtcggct 240  
 tttgaggaaa cgggaaagac caaggaagtg attgacaccg gctatggcat cctggacggg 300  
 aagggctctg gagtcaagta caccaagtcg gacttacggt taattgaagt cactgagacc 360  
 atttgcaaga ggcttctgga ctacagcctg cacaaggaga ggactggcag caaccggttt 420  
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<400> 50

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tgagcctcct ttagctggca gtgatatcgc tatagggcgc caaagccacc atccgctctc 180  
tgattgggtg agatgggaaa aaaaaaagat agttcctctc attggctata aagcagacgc 240  
cgagcgaacc cattgggtgn gtcgcccgcg ggccttggtc ggtttcgcaa gccgctagag 300  
gctaccgggc gagggcgagg ccggagctcg ccgttgccgt ggttaccag agacacgtgc 360  
gcagtcgccg aagcggccgg gggaagctgc tccgcgcgcg ctgccggagg aagcgcgcc 420  
gggtccgctc tgctctgggt ccggctgggc catggagtc atgtctgagc t 471

<210> 51

<211> 370

<212> DNA

<213> homologue of T243

<400> 51

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gtctccttgg ccctgctgtg tgctttgcgg caatgctggg tgctgtgact ctcgataaac 180  
ctggagatcc ctgcttttgg gcgaatccgg gggtagttgc tcatcaagac tagagggtggg 240  
ggtggaggga aggcctcata caggaagcct gctgcgaaat gaagagttgg ccagggaaaag 300  
catggcgtgc agaggaactc actccgcaga aaccacagaa acagaggcag atgaggacgc 360  
cctgccggcc 370

<210> 52

<211> 276

<212> PRT

<213> murine TRP

<400> 52

Met Glu Ser Met Ser Glu Leu Ala Pro Arg Cys Leu Leu Phe Pro Leu  
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Leu Leu Leu Leu Pro Leu Leu Leu Leu Pro Ala Pro Lys Leu Gly Pro  
20 25 30

Ser Pro Ala Gly Ala Glu Glu Thr Asp Trp Val Arg Leu Pro Ser Lys  
35 40 45

Cys Glu Val Cys Lys Tyr Val Ala Val Glu Leu Lys Ser Ala Phe Glu  
50 55 60

Glu Thr Gly Lys Thr Lys Glu Val Ile Asp Thr Gly Tyr Gly Ile Leu  
65 70 75 80

Asp Gly Lys Gly Ser Gly Val Lys Tyr Thr Lys Ser Asp Leu Arg Leu  
85 90 95

Ile Glu Val Thr Glu Thr Ile Cys Lys Arg Leu Leu Asp Tyr Ser Leu  
100 105 110

His Lys Glu Arg Thr Gly Ser Asn Arg Phe Ala Lys Gly Met Ser Glu  
115 120 125

Thr Phe Glu Thr Leu His Asn Leu Val His Lys Gly Val Lys Val Val  
130 135 140

Met Asp Ile Pro Tyr Glu Leu Trp Asn Glu Thr Ser Ala Glu Val Ala  
 145 150 155 160

Asp Leu Lys Lys Gln Cys Asp Val Leu Val Glu Glu Phe Glu Glu Val  
 165 170 175

Ile Glu Asp Trp Tyr Arg Asn His Gln Glu Glu Asp Leu Thr Glu Phe  
 180 185 190

Leu Cys Ala Asn His Val Leu Lys Gly Lys Asp Thr Ser Cys Leu Ala  
 195 200 205

Glu Arg Trp Ser Gly Lys Lys Gly Asp Ile Ala Ser Leu Gly Gly Lys  
 210 215 220

Lys Ser Lys Lys Lys Arg Ser Gly Val Lys Gly Ser Ser Ser Gly Ser  
 225 230 235 240

Ser Lys Gln Arg Lys Glu Leu Gly Gly Leu Gly Glu Asp Ala Asn Ala  
 245 250 255

Glu Glu Glu Glu Gly Val Gln Lys Ala Ser Pro Leu Pro His Ser Pro  
 260 265 270

Pro Asp Glu Leu  
 275

<210> 53  
 <211> 1848  
 <212> DNA  
 <213> expanded T243

<400> 53  
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 tccatgtctg agctgctgct gctgctgctg ctgctgctgc tgctgctgct gctgctgctg 120  
 ctgctgctgc tgctgctgct gctgctgctg ctgctgctgc tgctgctgct gctgctgctg 180  
 ctgctgctgc tgcgattgcc cagcaaagtc gaagtgtgca agtatgttgc tgtggagctg 240  
 aagtcggctt ttgaggaaac gggaaagacc aaggaagtga ttgacaccgg ctatggcatc 300  
 ctggacggga agggctctgg agtcaagtac accaagtcgg acttacggtt aattgaagtc 360  
 actgagacca ttgcaagag gcttctggac tacagcctgc acaaggagag gactggcagc 420  
 aaccggtttg ccaagggtat gtcggagacc ttgagacgc tgcacaacct agtccacaaa 480  
 ggggtcaagg tggatgga tatccctat gagctgtgga acgagacctc agcagaggtg 540  
 gctgacctca agaagcagtg tgacgtgctg gtggaagagt ttgaagaggt gattgaggac 600  
 tggtagagga accaccagga ggaagacctg actgaattcc tctgtgcaa ccacgtgctg 660  
 aagggaagg acacgagttg cctagcagag cgggtggtctg gcaagaaggg ggacatagcc 720  
 tccctgggag ggaagaaatc caagaagaag cgcagcggag tcaagggtc ctccagtggc 780  
 agcagcaagc agaggaagga actggggggc ctgggggagg atgccaacgc cgaggaggag 840  
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 cttagtgtcc ttgaatcaag acccctgact tcagagcttg ggacacgcac agcgcagcgc 960  
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 cctttccttc ccttgaacaa cagcaagagg tggaaggatc tgggggtgctg ggagacggca 1080  
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 aagagcatga ggcacataag atgctcacca gcgccccctt cagccaggaa ggactccgtg 1260  
 cagcctcagc agccaggcct gcctcttctt tccaccaagc attctcttct gctggtcctt 1320



gtcggatggt aaattcgaga acttccagga caaactcggg tgtggcacia aggggctgga 1380  
 cgccagagcc agagccacgc cagagactgc agagagggca cctgacctaa cccccctgga 1440  
 aagccaatct gcagttcccc tgtccaccca ctccctctga ggacgcctca tgctctgccc 1500  
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 tcctcatcag cctccagagt gtccctcat cgatcttttt tgcctttgtc ccccaatccc 1620  
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 gggagcgccc ggggttggtt tggggtaatc actcactggc tctcagcctt ctaacactgc 1740  
 agcccttaa tacagttcct tctgttgtgg tgactccac gccccacac acacaccata 1800  
 aaattatttc gatgctgttt cataactgta aaaaaaaaa aaaaaaaa 1848

<210> 54  
 <211> 279  
 <212> PRT  
 <213> expanded T243

<400> 54  
 Met Glu Ser Met Ser Glu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu  
 1 5 10 15  
 Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu  
 20 25 30  
 Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Arg Leu  
 35 40 45  
 Pro Ser Lys Cys Glu Val Cys Lys Tyr Val Ala Val Glu Leu Lys Ser  
 50 55 60  
 Ala Phe Glu Glu Thr Gly Lys Thr Lys Glu Val Ile Asp Thr Gly Tyr  
 65 70 75 80  
 Gly Ile Leu Asp Gly Lys Gly Ser Gly Val Lys Tyr Thr Lys Ser Asp  
 85 90 95  
 Leu Arg Leu Ile Glu Val Thr Glu Thr Ile Cys Lys Arg Leu Leu Asp  
 100 105 110  
 Tyr Ser Leu His Lys Glu Arg Thr Gly Ser Asn Arg Phe Ala Lys Gly  
 115 120 125  
 Met Ser Glu Thr Phe Glu Thr Leu His Asn Leu Val His Lys Gly Val  
 130 135 140  
 Lys Val Val Met Asp Ile Pro Tyr Glu Leu Trp Asn Glu Thr Ser Ala  
 145 150 155 160  
 Glu Val Ala Asp Leu Lys Lys Gln Cys Asp Val Leu Val Glu Glu Phe  
 165 170 175  
 Glu Glu Val Ile Glu Asp Trp Tyr Arg Asn His Gln Glu Glu Asp Leu  
 180 185 190  
 Thr Glu Phe Leu Cys Ala Asn His Val Leu Lys Gly Lys Asp Thr Ser  
 195 200 205  
 Cys Leu Ala Glu Arg Trp Ser Gly Lys Lys Gly Asp Ile Ala Ser Leu  
 210 215 220

Gly Gly Lys Lys Ser Lys Lys Lys Arg Ser Gly Val Lys Gly Ser Ser  
 225 230 235 240

Ser Gly Ser Ser Lys Gln Arg Lys Glu Leu Gly Gly Leu Gly Glu Asp  
 245 250 255

Ala Asn Ala Glu Glu Glu Glu Gly Val Gln Lys Ala Ser Pro Leu Pro  
 260 265 270

His Ser Pro Pro Asp Glu Leu  
 275

<210> 55  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: primer

<400> 55  
 gggccatgga gtccatgtct gagct 25

<210> 56  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: primer

<400> 56  
 acttcgcatt tgctgggcaa tcgca 25

<210> 57  
 <211> 1362  
 <212> DNA  
 <213> human TRP

<400> 57  
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 ctgctgctgc tgctgctgct gccggccccg gagctgggccc cgagccaggc cggagctgag 120  
 gagaacgact gggttcgccct gccagcaaaa tgcgaagtgt gtaaatatgt tgctgtggag 180  
 ctgaagtcag cctttgagga aaccggcaag accaaggagg tgattggcac gggctatggc 240  
 atcctggacc agaaggcctc tggagtcaaa tacaccaagt cggacttgcg gttaatcgaa 300  
 gtcactgaga ccatttgcaa gaggtcctcg gattatagcc tgcacaaagga gaggaccggc 360  
 agcaatcgat ttgccaaggg catgtcagag acctttgaga cattacacaa cctggtacac 420  
 aaaggggtca aggtggtgat ggacatcccc tatgagctgt ggaacgagac ttctgcagag 480  
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 gctgccctgg gagggaagaa gtccaagaag aagagcagca gggccaaggc agcaggcggc 720  
 aggagtagca gcagcaaaca aaggaaggag ctgggtggcc ttgagggaga ccccagcccc 780  
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catggctctg gcaggccggg atggccccgc agccttcagc cctccttgc cttggctgtg 960  
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 aggtactag gactgcagcc ccctgtagct cctctctgct taccctcct gtggacacct 1260  
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aa 1362

<210> 58  
 <211> 278  
 <212> PRT  
 <213> human TRP

<400> 58  
 Met Asp Ser Met Pro Glu Pro Ala Ser Arg Cys Leu Leu Leu Leu Pro  
 1 5 10 15  
 Leu Leu Leu Leu Leu Leu Leu Leu Leu Pro Ala Pro Glu Leu Gly Pro  
 20 25 30  
 Ser Gln Ala Gly Ala Glu Glu Asn Asp Trp Val Arg Leu Pro Ser Lys  
 35 40 45  
 Cys Glu Val Cys Lys Tyr Val Ala Val Glu Leu Lys Ser Ala Phe Glu  
 50 55 60  
 Glu Thr Gly Lys Thr Lys Glu Val Ile Gly Thr Gly Tyr Gly Ile Leu  
 65 70 75 80  
 Asp Gln Lys Ala Ser Gly Val Lys Tyr Thr Lys Ser Asp Leu Arg Leu  
 85 90 95  
 Ile Glu Val Thr Glu Thr Ile Cys Lys Arg Leu Leu Asp Tyr Ser Leu  
 100 105 110  
 His Lys Glu Arg Thr Gly Ser Asn Arg Phe Ala Lys Gly Met Ser Glu  
 115 120 125  
 Thr Phe Glu Thr Leu His Asn Leu Val His Lys Gly Val Lys Val Val  
 130 135 140  
 Met Asp Ile Pro Tyr Glu Leu Trp Asn Glu Thr Ser Ala Glu Val Ala  
 145 150 155 160  
 Asp Leu Lys Lys Gln Cys Asp Val Leu Val Glu Glu Phe Glu Glu Val  
 165 170 175  
 Ile Glu Asp Trp Tyr Arg Asn His Gln Glu Glu Asp Leu Thr Glu Phe  
 180 185 190  
 Leu Cys Ala Asn His Val Leu Lys Gly Lys Asp Thr Ser Cys Leu Ala  
 195 200 205  
 Glu Gln Trp Ser Gly Lys Lys Gly Asp Thr Ala Ala Leu Gly Gly Lys  
 210 215 220

Lys Ser Lys Lys Lys Ser Ser Arg Ala Lys Ala Ala Gly Gly Arg Ser  
 225 230 235 240

Ser Ser Ser Lys Gln Arg Lys Glu Leu Gly Gly Leu Glu Gly Asp Pro  
 245 250 255

Ser Pro Glu Glu Asp Glu Gly Ile Gln Lys Ala Ser Pro Leu Thr His  
 260 265 270

Ser Pro Pro Asp Glu Leu  
 275

<210> 59

<211> 107

<212> DNA

<213> deletion generated by knockout

<400> 59

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